

PATENT COOPERATION TREATY

PCT

REC'D 18 OCT 2005



WIPO

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FNTYA029WO	FOR FURTHER ACTION See Form PCT/PEA/416	
International application No. PCT/JP2004/008697	International filing date (day/month/year) 15.06.2004	Priority date (day/month/year) 15.07.2003
International Patent Classification (IPC) or national classification and IPC B60K6/04, B60L11/18		
Applicant TOYOTA JIDOSHA KABUSHIKI KAISHA et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand 05.02.2005	Date of completion of this report 17.10.2005	
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Bronold, H Telephone No. +49 89 2399-2948 	

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/JP2004/008697

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-34 as originally filed

Claims, Numbers

1-19 as originally filed

Drawings, Sheets

1/9-9/9 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify)*:
 - ☐ any table(s) related to sequence listing *(specify)*:
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify)*:
 - ☐ any table(s) related to sequence listing *(specify)*:

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/JP2004/008697

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	10
	No: Claims	1-9,11-19
Inventive step (IS)	Yes: Claims	
	No: Claims	1-19
Industrial applicability (IA)	Yes: Claims	1-19
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V.

1. The following documents are referred to in this communication:

- D1 : US 6 549 840 B1 (KAWABATA TAKUJI ET AL) 15 April 2003 (2003-04-15)
- D2 : US 6 381 522 B1 (SEKOZAWA TERUJI ET AL) 30 April 2002 (2002-04-30)
- D3 : US 2003/037977 A1 (AMANUMA HIROKATSU ET AL) 27 February 2003
(2003-02-27)
- D4 : EP 0 909 675 A (TOYOTA MOTOR CO LTD) 21 April 1999 (1999-04-21)
- D5: SPOONER E ET AL: "TORUS": A SLOTLESS, TOROIDAL-STATOR,
PERMANENT-MAGNET GENERATOR" IEE PROCEEDINGS B. ELECTRICAL
POWER APPLICATIONS, INSTITUTION OF ELECTRICAL ENGINEERS.
STEVENAGE, GB, vol. 139, no. 6, 1 November 1992 (1992-11-01), pages 497-
506, XP000343941

2. Novelty, Art. 33(1) and (2) PCT

2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parenthesis applying to this document):

A power output apparatus that outputs power to a drive shaft, said power output apparatus comprising:

an internal Combustion engine (column 23, line 37, "engine 14", figure 1) ;

an electric power-mechanical power input-output unit that is linked with an output shaft of said internal combustion engine and with said drive shaft, and maintains or changes a driving state of said internal combustion engine and outputs at least part of power from said internal combustion engine to said drive shaft through inputs and outputs of electric power and mechanical power (column 23, line 39, "planetary gear 18", in combination with column 23, line 38,

"motor/generator 16", figure 1);

a motor that is capable of inputting and outputting power from and to said drive shaft (column 23, line 38, "motor/generator 16", figure 1);

an accumulator that is capable of supplying and receiving electric power to and from said electric power-mechanical power input-output unit and said motor (column 26, line 49, "energy storing device 112"); and

a controller comprising: an input-output restriction setting module that sets an input restriction and an output restriction of said accumulator (column 28, line 61 to column 29, line 4, "upper limits") ; a drivable range setting module that sets a drivable range of said electric power-mechanical power input-output unit based on the settings of input and output restrictions (column 43, line 47 to column 44, line 29); a power demand setting module that sets a power demand required for said drive shaft in response to an operator's manipulation (column 26, lines 6 to 31, "accelerator pedal 122"); and a driving control module that controls said internal combustion engine, said electric power-mechanical power input-output unit, and said motor to drive said electric power-mechanical power input-output unit in the setting of drivable range and to output a power corresponding to the setting of power demand to said drive shaft (column 25, line 62 to column 26, line 44, "engine control device 100", "transmission control device 102", hybrid control device 104").

With respect to the electric power-mechanical power input-output unit the following additional remarks are given. The feature "electric power-mechanical power input-output unit" covers a very broad scope of protection and is not limited to the details of preferred embodiments of the invention like the combination of a planetary gear and a motor/generator, as e.g. disclosed on pages 16 and 17 of the description. The claim does not even define a gear set like a planetary gear as a necessary feature of the claimed power output apparatus. Therefore, any feature which is suitable to provide the desired function of inputting and/or outputting of electrical and/or mechanical power is novelty destroying for the said feature. In column 24, lines 12 to 34 of D1 it is disclosed that "...during operation of the engine..." the "...drive torque of

the M/G 16..." is increased during "...smooth starting of the vehicle...". This piece of disclosure can be read under the definitions given in the wording of the said feature of claim 1. Consequently, D1 discloses the feature "electric power-mechanical power input-output unit".

Thus, all features of claim 1 are already known from the disclosure of D1. Therefore, the subject matter of claim 1 is not new in the sense of Art. 33(1) and (2) PCT.

- 2.2 Although claims 2 and 11 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought and/or in respect of the terminology used for the features of that subject-matter.

In more detail, the subject matter of claim 11 differs from that of claim 1 only in the additional feature "automobile" which comprises all the features of claim 1.

However, an automobile with the features according to claim 1 is also known from the disclosure of D1 (column 1, lines 9 and 10).

Thus, the above said with respect to the subject matter of claim 1 applies mutatis mutandis to the subject matter of claim 11.

Therefore, all features of claim 11 are known from the disclosure of D1. Consequently, the subject matter of claim 11 is not new in the sense of Art. 33(1) and (2) PCT.

- 2.3 The subject matter of claim 18 relates to a purposive use of the apparatus according to claim 1. Thus, the above said with respect to the subject matter of claim 1 applies mutatis mutandis to the subject matter of claim 18.

Therefore, all features of claim 11 are known from the disclosure of D1. Consequently, the subject matter of claim 18 is not new in the sense of Art. 33(1) and (2) PCT.

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/JP2004/008697

- 2.4 Dependent claims 2-10, 12-17, 19 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT).